

THE TUBULAR BRIDGE FOR THE MENAI STRAITS.—The progress of the Britannia-bridge necessarily excites much attention. A correspondent of the *Leeds Intelligencer*, anticipating time, has given a notice of the bridge as if it were finished. Speaking of the iron tubes, he says:—"They are made of plates of iron, of various thicknesses, riveted together: the iron increases in thickness as we proceed towards the centre. The roofs of the tubes are formed of cells, and also the floors. Those cells are formed of iron plates set on edge, the cells of the roof being within a fraction of 1 foot 9 inches square; and those of the floor being 1 foot 9 inches wide, and 2 feet 3 inches deep. The rails on which the trains run are laid on these cells of the floor. The flat bottom, the two upright sides, and the flat roof of each tube are formed of plates, the thinnest of which is a quarter of an inch, and the thickest twelve-sixteenths of an inch; but the number of them laid together, and the internal joinings, cannot be yet explained. The weight of each of the long tubes will be about 1,300 tons; the weight of the four short ones about 600 tons. In the whole there will be at least 7,600 tons of iron used. No contracting estimate of the expense of the ironwork has been made, as the work may cost more or less, according to circumstances. The masonry was contracted for by B. J. Nowell and Co., at 134,000*l.*, but, from alterations in the plans, it will cost (supposing no further alterations he made) 200,000*l.* They expect to finish the masonry in August, 1848. It will contain one million and a half of cubic feet of stone. In May last, fifty vessels of sixty or seventy tons each were employed in conveying the stones to the works; the red sandstone, of which the inside courses are built, from Runcorn; the blue limestone, of which the outside courses are built, from the sea-shores of Anglesey. The quarries on the Anglesey shores opened for this work extended over twenty miles. In the whole there were 1,300 men employed, 600 of them at the bridge; the fortnightly wages of the latter amounted to 1,500*l.* Upwards of 200,000 cubic feet of timber has been used for stages and scaffolding. A steam-engine was at work on each shore; and a third was being erected on the Britannia rock, in the centre of the strait, to hoist the stones, grind mortar, saw timber, and perform other heavy work. On each shore there was a limekiln,—the chips of the limestone falling from the irons of the benders being burned into lime, and the chips of the red sandstone being ground to powder to make mortar with the lime."

A NEW ROTARY FOUR-HORSE POWER ENGINE IN A HAT-BOX!—Mr. Elijah Gallowsay has patented what has hitherto been esteemed much more as the philosopher's stone of steam-power than a practicable invention, and is accordingly supposed to have solved the knotty problem of the greatest possible economy of fuel, weight, and friction of which steam power is susceptible. A four-horse rotary engine under this patent is now at work at the factory of Mr. Tyrrell, engineer, at Deptford, in driving a furnace-blower, and it is said to be so wondrously portable as not to weigh more than two or three cwt., and not to occupy more than half the space of an ordinary hat-box! A steam pipe from the boiler brings the steam into this little receptacle; an eccentric crank is turned by the rotary motion within it; and here is all the machinery said to be necessary to propel the largest engines, whether mining, marine, or locomotive! The Admiralty are said to have ordered an estimate for supplying the *Minx* with a fifty-horse power one. They could not do better, we think, than name such a little whirling machine the *Minx* itself, and keep it in a hand-box.

TRIBUTE TO BRITISH SCIENCE FROM THE SULTAN MAHMUD.—We understand that our countryman, Mr. Fairbairn, of Manchester, has been presented with a decoration of one of the Turkish orders, in consideration of the valuable services performed by that gentleman in his capacity as engineer to several extensive works, undertaken at the desire of the sultan.

WIRE ROPE AND CORD.—Messrs. Newall's patent wire rope and cord, specimens of which we have lately examined, seems well adapted for hanging shades or pictures, and for other purposes where hemp-cord has hitherto been used, and greater durability is desirable.

ELECTRO-TELEGRAPHIC PROGRESS.—The telegraph on the Baden Railway was opened on 15th ult. The Government had appointed a commission to examine all the different telegraphs in use, and adopted Highton's Patent Gold-Leaf Telegraph. Professor Eisenlohr, of Carlsruhe, who superintends it, reports that the plan is so perfect that it must come into general use throughout the world. He states that with one wire only information has been transmitted at the rate of thirty letters a minute [nothing peculiarly new in that, we should think], whilst the most complicated apparatus, and one that costs ten times as much, and requires a much more powerful current of electricity, gives not more than sixty or seventy letters a minute, and is not certain in its action. The words in the report of the learned professor are, that "it excites the admiration of the world."

SANATORY MATTERS IN CHELSEA.—A correspondent writes:—"As the scourge of man, the cholera, is (they say) coming, it should not only be met as if we feared 'God and not the cholera,' but should be the means of inducing all parties to 'clean out' during the approaching cold season. Thinking possibly you might deem it a portion of your beneficial duty to urge this good work, I send you information as to what the authorities of 'old Chelsea' are doing, and, if you approve the same, it may be made a stimulus for the exertions of others. The Sanatory Commission have sent to the Board of Guardians a request for a report of the 'courts and alleys,' &c. The Board of Guardians have handed such request to the Chelsea Improvement Commissioners, seeking their co-operation. The latter body are, through their surveyor, visiting, and inspecting, and reporting on all cases of an unwholesome nature; such report is then to be submitted through the Board of Guardians for the report of their medical officers, and in all instances where the medical gentlemen report unfavourably, the Chelsea commissioners will take each individual case into their consideration, acting as the necessity of the matter may require, reporting from time to time in the Sanatory Commission; and as it is well known that in a multitude of cases persuasion is better than compulsion, wherever the same can be done, an intimation of the state of the property will be sent to the owners of it."

CAMBRIDGE ANTIQUARIAN SOCIETY.—From the report of the council we learn, that a second volume of the society's publications has been commenced by the recent issue to the members of No. XIII., being the Rev. J. Goodwin's *Eccelesia Augustini Gregoriani*, which will soon be followed by No. XIV., containing three papers, viz., Mr. Frank's on "Palimpsest Sepulchral Brasses;" Mr. C. W. Goodwin on "Two British Shields;" and Mr. J. O. Halliwell's catalogue of books, bequeathed by T. Markant to Corpus Christi College, Cambridge in the year 1439, with a list of their prices. The council, in concluding their report, express thanks to the Cambridge Philosophical Society for having granted the gratuitous use of its rooms for the meetings of this society. Such liberality, relieving the Antiquarian Society from the necessity of hiring a room in which to hold its meetings, has enabled the officers to reduce the expenses attendant upon conducting the society during the past year to the very small sum of 6*l.* 5*s.*, and placed it in the power of the council to expend about 180*l.* upon the museum and publications.

CLAY FOR ARCHITECTURAL PURPOSES.—Sir: I herewith forward you a small portion of newly-discovered clay, as taken from the strata in Leicestershire, which, beyond doubt, may be brought into many useful purposes,—either for all kinds of architectural ornaments, or the most minute castings. When dry it becomes much harder and more durable than any cement we have now in use. The following is its analysis:—

Silica, or sand	46 0
Alumina, or clay	24 4
Carbonate of lime	12 0
" " magnesia	4 0
Oxide, or rust of iron	7 0
Traces of common salt, gypsum, and little vegetable matter and moisture.....	6 8
	100 0

CHARLES HANBURY, C.E.
77, Connaught-terrace, Hyde Park.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for Sewers in Long Acre and St. Marylebone; for sundry Government works at Holyhead, comprising the formation of railways and the erection of sea walls; and for the erection of a lock-up house at Colshill.

CONTEMPLATED REMOVAL OF THE QUADRANT COLONNADE.—The Commissioners of Woods have given notice of an application to Parliament for power to remove the colonnade of the Regent-street Quadrant, and to sell the materials in defray the expense of new fronting the houses; and, should that prove insufficient, to make a rate on the inhabitants, who have for some time past complained of this colonnade as a hindrance to their business.

NEW STREET AND RECORD OFFICE.—The Commissioners have also given notice of application to Parliament for powers to make so much of the proposed new street of which we lately spoke, and to take such property as would be required for the site of the intended Record Office.

THE CORNARO PALACE AND ARMY AND NAVY CLUB-HOUSE.—In a notice of the proposed new building for the Army and Navy Club last week, the *Athenaeum* remarks, that "a contemporary (meaning *THE BUILDER*) is mistaken when he describes the Palazzo Cornaro as exhibiting three orders. It has only two,—an Ionic and a Corinthian upon a rusticated substructure, breaking into piers beneath each pair of columns." In truth, however, we have not the expression which is pointed out as a mistake. Our words are: "the Cornaro Palace has three stories above the basement, Doric, Ionic, and Corinthian" (we were pointing out the differences from that structure in Messrs. Parnell and Smith's design, which has but two stories above the basement), and this our usually correct contemporary will find to be the case.

FILE-CUTTING MACHINE.—A patent has at length been taken out by a Mr. E. Vickery, of Sheffield, for cutting files by machinery. By this invention, it is said, the difficulties are avoided by the machine being so arranged as to imitate the manual process now in use.

SOCIETY FOR THE IMPROVEMENT OF MEN EMPLOYED IN MANUFACTORIES.—This society, intended to advance the general improvement of working men; to purify and increase their sources of enjoyment; and to encourage and induce them to engage in the delightful work of self-improvement, as recently noticed by us, is making satisfactory progress. There are now seven auxiliaries, namely, in Lambeth, Vauxhall, Westminster, Southwark, Bermondsey, Shadwell, and Millwall; and lectures are being delivered gratuitously to the working men of London, and will continue to be so during the next winter months. At some of the lectures 1,000 operatives have been present. Mr. A. Austen, 34, Walnuttree-walk, Lambeth, is the secretary, and would give any required information. The cause is a noble one.

TIDAL HARBOUR BOARD.—The Tidal Harbour Commission having been abolished, Capt. Bethune, R.N., Capt. Washington, R.N., and Capt. Vetch, R.E., have been formed into a "Tidal Harbour and Conservancy Board," under the jurisdiction of the Admiralty, with a salary of 800*l.* per annum each.

THE USEFUL WITH THE ORNAMENTAL.—When Sir John Carr was in Glasgow, about the year 1807, he was asked by the magistrates to give his advice concerning the inscription to be placed on the Nelson monument, then just completed. The travelling knight recommended this brief record—"Glasgow to Nelson." "Just so," said one of the bailies; "and as the town o' Nelson's close at hand, might we no joist kill twa dougs wi' ae stone, an' joist say,—'Glasgow to Nelson—six mile;' an' so it might serve for a monument an' a mile-stane too?"

THE SANATORY MOVEMENT.—The object of the sanatory movement may be summed up in a few words—a sewer in every street of every town and village; a drain for every house; a constant and unlimited supply of good water to every family; pure air at any cost; the application of the refuse of towns to the purposes of agriculture; and, lastly, to secure these blessings, the removal of every impediment, physical and moral, and the destruction or reconstruction of every form of local administration which does not work well towards these righteous ends. — *Fraser's Magazine for November.*